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AGRICULTURAL MEMORANDUM No. 399

Heavy rains and field drainage 5. SOUTHWEST

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The following station were examined:

23.	Cheltenham (693 mm)	54.	Beaminster (1019 mm)
51.	Taunton (744 mm)	63.	Cardiff (1069 mm)
52.	Street (765 mm)	55.	St. Austell (1228 mm)
53.	Bath (785 mm)		

As might be expected from its geographical position Cardiff fitted better into the southwestern pattern than into that of Wales. Cheltenham, previously considered in the Midland category also fits well into the present pattern, suggesting that this station lies on the Midland-Southwest boundary.

The data are given in:-

Table 5A	Total occasions in 10 years
Table 5B	Occasions in 10 years when soil was below capacity
Table 5C	Occasions in 10 years when soil was at capacity

Smoothing was made more difficult by low readings from Street but these could be checked by nearby Taunton. In the high range St. Austell values appeared to be low in this sample with reference to Challacombe (1660 mm).

The results for soil at capacity are given in:

Table 5D	Occasions in 10 years	50 mm or more	1-8 days	650-1250 mm
Table 5E	Occasions in 10 years	75 mm or more	1-8 days	650-1250 mm
Table 5F	Occasions in 10 years	100 mm or more	1-8 days	650-1250 mm
Table 5G	Occasions in 10 years in individual categories of days and rainfall			

Any comments or suggestions on this paper should be referred to the author.

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TABLE 5A Total occasions in 10 years (a) 50-75 mm (b) 75-100 mm (c) Over 100 mm

	Site	Annual Average		Period of days 1	2	3	4	5	6	7	8 days or less
23.	Cheltenham (Glous)	693	(a)	1	3	8	23	45	60	88	129
			(b)	0	0	0	0	2	8	15	19
			(c)	0	0	0	0	0	0	0	1
			TOTAL	1	3	8	23	47	68	103	149
51.	Taunton (Somerset)	744	(a)	2	6	16	37	52	77	104	140
			(b)	0	0	1	5	13	22	27	31
			(c)	0	0	0	0	2	3	7	14
			TOTAL	2	6	17	42	67	102	138	185
52.	Street (Somerset)	765	(a)	1	4	7	19	38	61	89	116
			(b)	0	0	0	0	3	8	15	22
			(c)	0	0	0	0	0	0	0	3
			TOTAL	1	4	7	19	41	69	104	141
53.	Bath (Somerset)	785	(a)	2	8	20	52	80	104	135	172
			(b)	0	0	0	0	3	15	27	44
			(c)	0	0	0	0	0	0	1	5
			TOTAL	2	8	20	52	83	119	163	221
54.	Beaminster (Dorset)	1019	(a)	0	11	32	73	122	183	258	331
			(b)	1	3	7	16	27	38	53	75
			(c)	1	2	5	9	16	28	41	57
			TOTAL	2	16	44	98	165	249	352	463
63.	Cardiff (Glam)	1069	(a)	1	9	32	86	164	249	329	406
			(b)	0	0	1	8	18	35	63	112
			(c)	0	0	0	0	0	1	3	10
			TOTAL	1	9	33	94	182	285	395	528
55.	St. Austell (Cornwall)	1228	(a)	1	6	34	83	176	269	363	459
			(b)	0	1	5	16	28	43	74	121
			(c)	1	2	3	4	8	16	21	33
			TOTAL	2	9	42	103	202	328	458	613

TABLE 5B Soil below Capacity (a) 50-75 mm (b) 75-100 mm (c) Over 100 mm

Site	Annual Average		Period of days 1	2	3	4	5	6	7	8 days or less
Cheltenham	693	(a)	1	2	4	13	23	31	47	64
		(b)	0	0	0	0	1	4	6	8
		(c)	0	0	0	0	0	0	0	0
		TOTAL	1	2	4	13	24	35	53	72
Taunton	744	(a)	1	3	6	14	17	23	28	33
		(b)	0	0	1	2	6	8	11	13
		(c)	0	0	0	0	0	0	0	0
		TOTAL	1	3	7	16	23	31	39	46
Street	765	(a)	1	2	3	4	8	19	28	46
		(b)	0	0	0	0	1	2	4	6
		(c)	0	0	0	0	0	0	0	0
		TOTAL	1	2	3	4	9	21	32	52
Bath	785	(a)	0	1	5	17	29	37	44	53
		(b)	0	0	0	0	0	3	7	15
		(c)	0	0	0	0	0	0	0	0
		TOTAL	0	1	5	17	29	40	51	68
Beaminster	1019	(a)	0	0	2	7	18	35	50	71
		(b)	0	0	0	0	0	0	3	5
		(c)	0	0	0	0	0	0	0	0
		TOTAL	0	0	2	7	18	35	53	76
Cardiff	1069	(a)	0	0	4	14	25	34	44	57
		(b)	0	0	0	0	1	4	9	15
		(c)	0	0	0	0	0	0	0	0
		TOTAL	0	0	4	14	26	38	53	72
St. Austell	1228	(a)	0	1	2	5	8	13	22	31
		(b)	0	1	2	3	5	7	9	11
		(c)	1	2	3	4	5	6	7	8
		TOTAL	1	4	7	12	18	26	38	50

TABLE 5C Soil at Capacity (a) 50-75 mm (b) 75-100 mm (c) Over 100 mm

Site	Annual Average		Period of days 1	2	3	4	5	6	7	8 days or less
Cheltenham	693	(a)	0	1	4	10	22	29	41	65
		(b)	0	0	0	0	1	4	9	11
		(c)	0	0	0	0	0	0	0	1
		TOTAL	0	1	4	10	23	33	50	77
Taunton	744	(a)	1	3	10	23	35	54	76	107
		(b)	0	0	0	3	7	14	16	18
		(c)	0	0	0	0	2	3	7	14
		TOTAL	1	3	10	26	44	71	99	139
Street	765	(a)	0	2	4	15	30	42	61	70
		(b)	0	0	0	0	2	6	11	16
		(c)	0	0	0	0	0	0	0	3
		TOTAL	0	2	4	15	32	48	72	89
Bath	785	(a)	2	7	15	35	51	67	91	119
		(b)	0	0	0	0	3	12	20	29
		(c)	0	0	0	0	0	0	1	5
		TOTAL	2	7	15	35	54	79	112	153
Beaminster	1019	(a)	0	11	30	66	104	148	208	260
		(b)	1	3	7	16	27	38	50	70
		(c)	1	2	5	9	16	28	41	57
		TOTAL	2	16	42	91	147	214	299	387
Cardiff	1069	(a)	1	9	28	72	139	125	285	349
		(b)	0	0	1	8	17	31	54	97
		(c)	0	0	0	0	0	1	3	10
		TOTAL	1	9	29	80	156	247	342	456
St. Austell	1228	(a)	1	5	32	78	168	256	341	428
		(b)	0	0	3	13	23	36	65	110
		(c)	0	0	0	0	3	10	14	25
		TOTAL	1	5	35	91	184	302	420	563

TABLE 5D SOUTHWEST 50 mm or more Occasions in 10 years Soil at Capacity

Annual Average	1	2	3	4	5	6	7	8 days or less
650	0	1	3	7	12	20	30	50
700	0	2	5	12	21	33	50	75
750	1	3	10	20	35	53	80	110
800	1	4	15	30	50	75	110	150
850	2	5	20	40	65	100	140	195
900	2	6	25	53	85	125	180	250
950	2	7	30	66	105	155	220	310
1000	2	8	36	79	126	190	270	360
1050	2	10	42	92	150	225	315	415
1100	3	13	49	105	176	260	360	470
1150	3	16	56	123	200	295	405	525
1200	4	19	63	142	226	330	450	580
1250	4	22	70	161	256	370	495	635

TABLE 5E SOUTHWEST 75 mm or more Occasions in 10 years Soil at Capacity

Annual Average	1	2	3	4	5	6	7	8 days or less
650	0	0	0	0	0	2	4	10
700	0	0	0	0	1	4	9	15
750	0	0	0	1	3	8	15	26
800	0	0	0	2	5	12	22	37
850	0	0	0	3	7	16	30	48
900	0	0	0	4	9	20	40	60
950	0	0	1	5	11	25	50	75
1000	0	0	2	6	13	30	60	90
1050	0	0	3	7	15	35	70	105
1100	0	0	4	9	18	40	80	120
1150	0	0	5	11	22	50	90	135
1200	0	1	6	14	26	60	105	150
1250	1	2	8	17	33	75	120	165

TABLE 5F SOUTHWEST 100 mm or more Occasions in 10 years Soil at Capacity

Annual Average	1	2	3	4	5	6	7	8 days or less
650	0	0	0	0	0	0	0	1
700	0	0	0	0	0	0	1	2
750	0	0	0	0	0	0	1	3
800	0	0	0	0	0	0	2	4
850	0	0	0	0	0	1	2	5
900	0	0	0	0	0	1	3	7
950	0	0	0	0	0	2	4	9
1000	0	0	0	0	1	3	5	11
1050	0	0	0	0	1	4	6	13
1100	0	0	0	1	2	5	8	16
1150	0	0	0	1	3	6	10	20
1200	0	0	0	2	4	7	15	25
1250	0	0	1	3	6	11	22	35

TABLE 5G SOUTHWEST Occasions in 10 years Soil at Capacity (a) 50-75 mm (b) 75-100 mm (c) Over 100 mm

Annual Average		1	2	3	4	5	6	7	8	days but not less
650	(a)	0	1	2	4	5	6	8	14	
	(b)	0	0	0	0	0	2	2	5	
	(c)	0	0	0	0	0	0	0	1	
	TOTAL	0	1	2	4	5	8	10	20	50
700	(a)	0	2	3	7	8	9	12	19	
	(b)	0	0	0	0	1	3	4	5	
	(c)	0	0	0	0	0	0	1	1	
	TOTAL	0	2	3	7	9	12	17	25	75
750	(a)	1	2	7	9	13	13	20	19	
	(b)	0	0	0	1	2	5	6	9	
	(c)	0	0	0	0	0	0	1	2	
	TOTAL	1	2	7	10	15	18	27	30	110
800	(a)	1	3	11	13	17	18	25	25	
	(b)	0	0	0	2	3	7	8	13	
	(c)	0	0	0	0	0	0	2	2	
	TOTAL	1	3	11	15	20	25	35	40	150
850	(a)	2	3	15	17	21	26	26	37	
	(b)	0	0	0	3	4	8	13	15	
	(c)	0	0	0	0	0	1	1	3	
	TOTAL	2	3	15	20	25	35	40	55	195
900	(a)	2	4	18	24	27	29	35	50	
	(b)	0	0	1	3	5	10	18	16	
	(c)	0	0	0	0	0	1	2	5	
	TOTAL	2	4	19	27	32	40	55	71	250
950	(a)	2	5	22	32	33	36	40	65	
	(b)	0	0	1	4	6	12	23	20	
	(c)	0	0	0	0	0	2	2	5	
	TOTAL	2	5	23	36	39	50	65	90	310
1000	(a)	2	6	26	39	40	47	50	60	
	(b)	0	0	2	4	6	15	28	24	
	(c)	0	0	0	0	1	2	2	6	
	TOTAL	2	6	28	43	47	64	80	90	360
1050	(a)	2	8	29	46	50	55	55	65	
	(b)	0	0	3	4	7	17	32	29	
	(c)	0	0	0	0	1	3	3	6	
	TOTAL	2	8	32	50	58	75	90	100	415
1100	(a)	3	10	32	49	64	62	60	70	
	(b)	0	0	4	4	8	19	37	32	
	(c)	0	0	0	1	1	3	3	8	
	TOTAL	3	10	36	54	73	84	100	110	470
1150	(a)	3	13	35	61	66	67	70	75	
	(b)	0	0	5	5	9	25	36	35	
	(c)	0	0	0	1	2	3	4	10	
	TOTAL	3	13	40	67	77	95	110	120	525
1200	(a)	4	14	39	71	72	70	75	85	
	(c)	0	1	5	6	10	31	37	35	
	(c)	0	0	0	2	2	3	8	10	
	TOTAL	4	15	44	79	84	104	120	130	580
1250	(a)	3	17	42	82	79	72	80	95	
	(b)	1	1	5	7	13	37	34	32	
	(c)	0	0	1	2	3	5	11	13	
	TOTAL	4	18	48	91	95	114	125	140	635